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Master Thesis Defense

Entitled

DISTRIBUTION OF ERM PROTEINS IN THE STOMACH MUCOSA OF NORMAL AND DIABETIC RATS.

By

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Date & Venue

At 1 PM

Wednesday, 23 November 2022

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Abstract:

Diabetes mellitus (DM), or simply diabetes, refers to a group of metabolic disorders that include a variety of diseases that disrupt our body's metabolism. The long-term uncontrolled disease can lead to stomach complications such as gastroparesis, as well as disruption in several proteins, such as ERM proteins. ERM proteins are made up of three related proteins (ezrin, radixin, and moesin) that are structurally and functionally related. ERM proteins have molecular masses of 82, 80, and 75 kDa, respectively. Ezrin is highly expressed in the stomach, especially in parietal cells that secrete gastric acid. ERM proteins function as scaffolding proteins in lipid rafts and granule trafficking in secretory cells such as gastric parietal cells and pancreatic islet cells. Diabetes affects the activity of ERM proteins in tissues, resulting in DM complications. In our study, we hypothesized that diabetes would cause ERM proteins to be downregulated in diabetic rat's stomach; additionally, we want to investigate whether ERM proteins co-localized with other membrane proteins such as Icam, CD44, Actin, and Na^+/K^+ and other protein in the stomach such as pepsin. To put our hypothesis to the test, we used western blots, immunohistochemistry, and immunofluorescence to measure and detect ERM proteins in normal and diabetic rat stomach mucosa. Diabetes, according to our findings, reduces the expression of ERM proteins in the stomach mucosa. Furthermore, ERM proteins co-localized with Cd44, Icam, Na+/K+, and actin, but not pepsin. More research is needed to determine whether ERM proteins are directly linked to stomach complications of diabetes. Additionally, ERM proteins could be promising for the treatment of stomach complications of diabetes in the future.

Keywords: Diabetes Mellitus, ERM proteins, stomach, rat, streptozotocin, immunohistochemistry.